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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/757,338	01/09/2001	Michael Fabry	02103-399001 / AABOSS29	8138
26162	7590	09/07/2005		EXAMINER
FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			GRAHAM, ANDREW R	
			ART UNIT	PAPER NUMBER
			2644	

DATE MAILED: 09/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/757,338	FABRY, MICHAEL	
	Examiner	Art Unit	
	Andrew Graham	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 6/15/05.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-11 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-11 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 6/15/05 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date: _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date: _____	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

DETAILED ACTION***Response to Arguments***

1. Applicant's arguments filed 6/15/05 have been fully considered but they are not persuasive.

On page 5, lines 9-11, the applicant has stated, "The Examiner relies on the secondary reference patent as disclosing the second passenger location, but fails to identify any disclosure in the references that suggests the desirability of combining what is disclosed in the references to meet the limitations of claim 1". The examiner respectfully notes, however, that it is well-established that, as an alternative to "the teachings of the prior art", "the knowledge of persons of ordinary skill in the art" is a valid source for a motivation to combine references. In the present case, the inclusion of a rear seat in an automobile for the purpose of holding additional passengers, beyond that which is illustrated for two passengers in Figure 2 of Hatley, was notoriously well-known in the art to those of ordinary skill. The teachings of Greenberger provide one example of such a seating arrangement, wherein the placement of speakers in the rear shelf corresponds to the positioning taught in Hatley of a rear deck of an automobile (col. 5, lines 47-51 of Hatley; col. 90, lines 50-56). The invention of Hatley relates to a system for optimizing the audio image of a driver and multiple passengers, as is clearly disclosed as the intended application of the invention as well as being known in the prior art of Hatley (col. 1, lines 8-12 and col. 2, lines 3-8). As such, the inclusion of a rear-seat with

Art Unit: 2644

speakers positioned on a rear-shelf behind, as is taught by Greenberger, is notoriously well-known in the art as desirable, and is further suggested by the intentions of Hatley to produce a sound field for a driver and a plurality of passengers.

On page 5, lines 12-14, the applicant has stated, "The contention that the motivation to combine is to provide additional passenger space is pure speculation and improperly using the claim being rejected as a blueprint in attempting to read claim limitations on prior art". The examiner respectfully disagrees. As cited above, the intention of Hatley is to optimize the sound field for a driver and a plurality of passengers (col. 1, lines 8-12). The provision of additional passenger space, such as taught for the vehicular sound environment of Greenberger (Figures 21a-e), is one form of vehicular compartment arrangement that would have made such an intention possible. As such, the motivation to combine is at least based on the teachings of Hatley, as well as the knowledge of one of ordinary skill in the art, and not speculation.

On page 5, lines 25-26, the applicant has stated, "The Examiner makes no contention that it is possible to combine the references to meet the limitations regarding which signals are transduced by which electroacoustical transducers". The examiner respectfully disagrees. The correlation in the limitations between which signals are transduced by which electroacoustical transducers was clearly addressed in the previous office action, as is repeated hereinbelow. Claim 5 (and its subject material which is analogously repeated in

Art Unit: 2644

latter claims) appears to be the only claim that contains limitations affected by the proposed combination of references in terms of which signals are transduced by which electroacoustical transducers. The correlation between a rear deck speaker 168 of Hatley and the rear shelf speaker illustrated by Greenberger was noted in the previous office action as is repeated below. A reasonable expectation of success is established by the teachings of Hatley, which utilizes a plurality of speakers to provide a balanced sound fields for a plurality of listeners, wherein two speakers may be positioned in the rear deck of automobile (col. 2, lines 60-63; col. 5, lines 35-51) in view of the teachings of Greenberger, which teaches that rear shelf positioned speakers, such as that shown in Figure 21a, can generate a balanced stereo perspective for both front and rear seat passengers (col. 90, lines 53-60). Clearly, the rear shelf speaker arrangement of Greenberger, which includes a rear seat positioned therein between, enables sound to reach front seating area passengers analogous to those shown in Figure 2 of Hatley.

On page 6, lines 13-15, the applicant has stated, in regards to Claim 5, that "the contention that the claimed third electroacoustical transducer that is behind the second passenger location reads on transducer 168 of the primary reference because transducer 170 could be on the parcel shelf is unsound". The examiner respectfully notes that, in regards to Claim 5, no such contention correlating the 'third electroacoustical transducer' and transducer 168 of Hatley was made. Rather, transducer 170, which is taught by Hatley as being positioned

Art Unit: 2644

on a rear deck, was equated to the third claimed transducer in the previous office action, as is repeated below. The positional relationship between such a transducer 170 and a second, rear seating area, was based on the teachings of Greenberger in view of the possibility denoted by Hatley for locating such a transducer 170 on a rear deck. No teachings of Hatley preclude such a combination, and a reasonable expectation of success has been addressed in the above paragraph. To reiterate, Greenberger teaches that such a speaker arrangement, which includes a rear seating area positioned forward of rear parcel shelf speakers, provides a balanced sound field for at least front passengers of an automobile (col. 90, lines 53-60). Hatley illustrates two such passengers in Figure 2, noting that two speakers 168,170 shown therein may be positioned on a rear deck. Hatley also teaches that such an improved system is for providing a balanced sound field for a plurality of passengers, which is, as noted above, the result of such rear shelf positioning of speakers in the system of Greenberger.

On page 6, lines 15-16, the applicant has stated, "Transducer 170 is the right channel equivalent of left transducer 168, and both transducers have the same front/back location". The examiner respectfully notes, however, that such a relative positioning is not precluded by the currently submitted claim language.

On page 6, lines 17-20 and page 7, lines 1-3, the applicant has stated, "Claims 2-5 are dependent upon and include all the limitations of claim 1, and the reasoning in support of the patentability of claim

Art Unit: 2644

1 supports the patentability of claims 2-5" and "The reasoning set forth above in support of the patentability of claim 1 is submitted to support the patentability of claim 6" and "Claims 10 and 11 are patterned after claims 3 and 9 respectively, and are submitted to meet the conditions for patentability at least for the reasons advanced in support of claims 3 and 9". As these reasons have been addressed in the response above, the rejections of these claims have been reviewed and are respectively maintained herein.

Drawings

2. Replacement drawings were received on 6/15/05. However, a new drawing in compliance with 37 CFR 1.121(d) is required in this application because the drawings fail to the requirements of 37 CFR 1.84(u)(1), as the application includes only one view. Also, the reference character of '10', mentioned on page 2 of the specification, is absent from the figure, which fails to meet the requirements of 37 CFR 1.84(p)(5). Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. **Claims 1-11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatley et al (USPN 5113447) in view of Greenberger (USPN 5870484). "Hatley et al" will be referred to as "Hatley".

Hatley discloses a system for optimizing audio imaging in an automotive listening environment.

Regarding **Claim 1**, Hatley teaches:

An audio system (200) for a vehicle (172) (col. 5, lines 35-60; Figure 2), said vehicle comprising a first passenger location (space for passengers, such as driver in Figure 2; col 5, lines 61-66)

and said audio system comprising:

a first directional audio channel (left channel, L, or alternatively, center channel, C) signal source (L_{IN} input port or output of 102 for summed signal; Figures 1A and 1B; col. 3, lines 46-66; col. 4, lines 14-43);

a surround audio channel signal source (side channel difference signal or ambience signal, output of 152, Figure 1B; col. 4, lines 44-63);

Art Unit: 2644

a first electroacoustical transducer (168) coupled to said first directional audio signal source (L or C, via 112' and 162; Figures 1B,2; col. 5, lines 3-13 and 43-51) and to said surround audio channel source (output of 152, via 154, 156, and summer 112'; col. 4, lines 44-68; col. 5, lines 1-13), situated behind said first passenger location ("rear deck", interpreted to be space adjacent to rear windshield in vehicle, such as illustrated in Greenberger, discussed below),

said first electroacoustical transducer (168) constructed and arranged (connected to L_{out} via amplifier 162; Figure 2) to radiate sound waves corresponding to audio signals from said first directional audio channel signal source (L_{IN} or output of 102) and corresponding to audio signals from said surround audio channel signal source (output of 152)(such signals are summed to form L_{out} signal and output through amplifier (162) to speaker (168); col. 5, lines 3-13 and 43-51); and

a second electroacoustical transducer (174) coupled to said first directional audio signal source (L_{IN} input port or output of 102, as noted above; coupled to L_I via 102,104,106,108, and 164, or alternatively, coupled to sum signal, output of 102, via 104,106,108, and 164; col. 3, lines 46-66; col. 5, lines 43-51) situated forward of said first electroacoustical transducer(168) ("dashboard"; col. 5, lines 53-57),

said second electroacoustical transducer constructed and arranged to radiate sound waves corresponding to audio signals from said first directional audio channel signal source (connected to C_{out} , via

Art Unit: 2644

amplifier 164; col. 5, lines 43-51; C_{out} "corresponds" to left channel source as half of signal is provided to produce center channel signal; C_{out} "corresponds" to center channel source as output signal is weighed summation signal to be played back and perceived from a forward location).

Regarding the passengers in the vehicle, Hatley notes that vehicles may include a driver and one or more passengers (col. 2, lines 5-11). As noted above, Hatley teaches that transducers (168, 170) may be located in the rear deck of the automobile (col. 5, lines 47-51). However, neither seating arrangements for "or more" passengers nor the passenger-relevant location of a rear deck are clearly detailed or illustrated by Hatley.

Accordingly, Hatley does not clearly specify:

- a second passenger location, said second passenger location situated behind said first passenger location,

Greenberger teaches a loudspeaker array with particular radiation patterns, including several embodiments of such an invention that are applicable to an automobile (Figures 21a-e).

Specifically regarding **Claim 1**, Greenberger teaches:

- An audio system for a vehicle (Figure 21e; col. 89, lines 41-44),
- said vehicle comprising a second passenger location ("rear seat", col. 90, lines 36-62; Figure 21e)
- said second passenger location situated behind said first passenger location ("rear seat" behind "front seat", by

Art Unit: 2644

definition and as illustrated in Figure 21e; col. 90,
lines 51-62 discuss both front and rear seat passengers)

In the context of an automobile, the "rear package shelf" of Greenberger is interpreted as equivalent to the "rear deck" of Hatley, located at least behind a front passenger location. It is further noted that Greenburger teaches the use of left and right channel speakers with front center and left and right rear speakers (col. 92, lines 7-37).

To one of ordinary skill in the art at the time the invention was made, it would have been obvious to implement the audio system of Hatley into an automobile with a rear passenger seat, as is disclosed for the automobile audio system of Greenberger. The motivation behind such a modification would have been that such an additional seating location would have provided space inside the vehicle for passengers in addition to the driver and a passenger adjacent to the driver.

Regarding **Claim 2**, Hatley teaches:

a first audio signal scaling device (106) coupling (via 110, 112', 162) said directional audio channel source (L_{IN} or output of 102) and said first electroacoustical transducer (168) (col. 3, lines 58-68; col. 4, lines 1-9; col. 5, lines 43-51; Figures 1B, 2),
and a second audio signal scaling device (156) coupling (via 112', 162) said surround audio channel source (output of 152) and said first electroacoustical transducer (168) (col. 4, lines 65-68).

Regarding **Claim 3**, Hatley teaches:

Art Unit: 2644

a second directional audio channel source (C, output of 102, interpreting L_{IN} as first audio signal source for parent claim), coupled (via 104,106,110,112',162) to said first electroacoustical transducer (168) (col. 3, lines 46-66; col. 5, lines 43-51; Figures 1B,2)

Regarding **Claim 4**, Hatley teaches:

said second directional audio channel source (output of 102) is a center channel source (col. 3, lines 46-62; col. 4, lines 14-29)

Regarding **Claim 5**, Hatley in view of Greenberger teaches:

a third electroacoustical transducer (170), situated behind said second passenger location (transducer 170 disclosed by Hatley as possibly located on rear deck of car (col. 5, lines 47-51), Greenberger illustrates rear shelf speaker placement behind rear passenger location (col. 90, lines 38-40; col. 92, lines 57-60), coupled to said surround channel source (output of 152, via 154,156, 158,114'; col. 4, lines 54-68; col. 5, lines 1-18 of Hatley),

said third electroacoustical transducer (170 of Hatley) constructed and arranged (connected via amplifier 166 of Hatley) for radiating sound waves corresponding to audio signals from said surround audio channel signal source (output of 152 of Hatley) (speaker 170 of Hatley outputs right side difference signal, which "corresponds" to output of 152 as an inverted version; col. 5, lines 13-18 and 43-51 of Hatley).

Regarding **Claim 6**, please refer to the above rejection of the similar limitations of Claims 1 and 3, particularly noting the

Art Unit: 2644

movement of the audio signal along the paths between the components cited therein.

Regarding **Claim 7**, please refer to the above rejection of the similar limitations of Claim 3, noting the movement of the audio signals along the paths between components cited therein.

Regarding **Claim 8**, please refer to the above rejection of the similar limitations of Claim 2, noting the function of the components cited therein.

Regarding **Claim 9**, please refer to the above rejection of the similar limitations of Claim 5, noting the movement of the signals along the signal paths between the components cited therein.

Regarding **Claim 10**, please refer to the above rejection of the similar limitations of Claims 1 and 5, noting the function and connections of the components and signals cited therein.

Regarding **Claim 11**, please refer to the above rejection of the similar limitations of Claims 1, 3, and 5, noting the movement of the signals along the signal paths between the components cited therein.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

Art Unit: 2644

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Graham whose telephone number is 571-272-7517. The examiner can normally be reached on Monday-Friday, 8:30 AM to 5:00 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit: 2644

AG

Andrew Graham

Examiner

A.U. 2644

ag

September 1, 2005



VIVIAN CHIN

SUPERVISORY PATENT EXAMINER

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